Transport TA26

B2932

Service Engineer’s Manual

PREFACE

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Version 1.0

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Operation is subject to the following conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received including interference that may cause undesired operation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Plug the equipment into an outlet on a circuit different from that of the receiver.

Consult the dealer on an experienced radio/television technician for help.

Notice for Canada

This apparatus complies with the Class B limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations. (Cet appareil est conforme aux norms de Classe B d'interference radio tel que specifie par le Ministere Canadien des Communications dans les reglements d'ineteference radio.)

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CAUTION: Lithium battery included with this board. Do not puncture, mutilate, or dispose of battery in fire. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by manufacturer. Dispose of used battery according to manufacturer instructions and in accordance with your local regulations.

About this Manual

This manual provides you with instructions on installing your Transport TA26 B2932. This manual is intended for experienced users and integrators with hardware knowledge of personal computers.

This manual consists of the following parts:

Chapter 1: Provides an Introduction to the TA26 B2932 barebone, packing list, describes the external components, gives a table of key components, and provides block diagrams of the system.

Chapter 2: Covers procedures on installing the CPU, memory modules, PCI/PCI-E/PCI-X cards, hard drives, and floppy drive.

Chapter 3: Covers removal and replacement procedures for pre-installed components

Appendix: Provides instructions on installing the SMDC card. Describes the differences between mainboard BIOS and system BIOS. The cable connection and FRU parts tables are also provided for reference of system setup.

For information on the mainboard, please refer to the attached mainboard user's manual. You can find the detailed description about jumper and BIOS settings from the motherboard manual.

SAFETY INFORMATION

Before installing and using the TA26 B2932, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots and opening on the unit, which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure, contact the Power Company.
- The unit uses a three-wire ground cable, which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be in the way of foot traffic.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots as they may touch high voltage components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manufacturer.
- When service or repairs have been done, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.

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Chapter 1: Overview

1.1 About the TYAN Transport TA26 B2932

Congratulations on your purchase of the TYAN Transport TA26 B2932, a highly-optimized rack-mountable barebone system. The Transport TA26 B2932 is designed to support AMD® Opteron™ 2000 1207-pin processor, providing a rich feature set and incredible performance. Leveraging advanced technology from AMD®, the Transport TA26 B2932 server system is capable of offering scalable 32 and 64-bit computing, high-bandwidth memory design, and a lightning-fast PCI-X bus implementation. The Transport TA26 B2932 not only empowers your company in today's demanding IT environment but also offers a smooth path for future application usage.

TYAN is also proud to deliver the Transport TA26 B2932 in SAS flavor while supporting up to eight (8) hot-swap hard drives and one (1) slim DVD-ROM drive. The Transport TA26 B2932 uses TYAN's latest tooling-made chassis featuring a robust structure, tool-less and modularized design, and a solid mechanical enclosure. All of this provides the Transport TA26 B2932 the power and flexibility to meet the needs of nearly any server application.

1.2 Product Models

Model	HDD Bays	Backplane	Power Supply
B2932T26W8H	8	8-port SAS/SATA	Single 600W
B2932T26W8HR	8	8-port SAS/SATA	600W (1+1) redundant

1.3 Features

Enclosure
- Industry 2U rack-mountable chassis
- Storage bay:
  - (8) 3.5” HDD bays
  - (1) slim line ODD bay
- Dimensions:
  - D 26 x W 16.7 x H 3.4 inch
  - D 660 x W423 x H 87 mm

Motherboard
- TYAN Thunder n3600M S2932
- Extended ATX footprint (12” x 13”)

Processors
- Dual µ PGA1207-pin ZIF L1 sockets
- Supports one or two AMD® Opteron™ 2000 series processors

Chipset
- nVIDIA nForce Pro 3600
- NEC nPD720400
- SMSC DME5017
- LSI 1068E

Memory
- Dual memory channels
- Total sixteen (16) 240-pin 1.8-Volt DDRII DIMM sockets (8 on CPU1 and 8 on CPU2)
- Supports up to 64GB of registered DDRII 667MHz
- Supports ECC type memory module

Video
- ATI® ES1000™ PCI graphics controller
- 32MB DDR Frame Buffer of video memory

BIOS
- AMI BIOS 8Mbit Flash
- Supports APM 2.0
- PnP, DMI 2.0, WfM 2.0 Power Management

Expansion Slots
- Two (2) PCI-Express x16 slots (each w/ x8 signal)
- Two (2) PCI-X 133/100MHz slot
- One (1) PCI-X 100MHz slot
- One (1) PCI 32-bit 33MHz, v2.3 compliant slot
- Supports a total of six (6) low profile cards

Back I/O Ports
- One keyboard & one PS/2 mouse ports
- Two (2) USB 2.0 ports
- One 15-pin VGA port
- One 9-pin COM port
- Two RJ45 (Marvell 88E1121 PHY + nVIDIA MAC)

Front Panel Features
- I/O
  - (2) USB 2.0 ports
- LED indicators
  - Power LED
  - (2) LAN LEDs
  - HDD Active LED
- Switches
  - Power
  - Reset

Storage Controller
- SATA Controller
  - Integrated six (6) SATA ports
  - Serial ATA II Host controllers embedded
  - NV RAID 0, 1, 0+1, 5 and JBOD support
- SAS Controller
  - Eight (8) SAS ports
  - LSI 1068E PCI-E SAS controller
  - NV RAID 0, 1 and JBOD support

Storage Backplane
- One (1) 8-port SAS backplane, supporting up to 8 SAS HDDs or SATA HDDs

Networking
- Two 10/100/1000 Base-T LAN (nForce Pro 3600 integrated MAC with Marvell 88E1121 Gigabit Ethernet PHY)
  - IEEE802.3 compliant, WOL/PXE support
  - Pin header for front panel LAN LED

Server Management

- Automatic fan speed control
- Chassis intrusion alert
- Supports TYAN Server Management (TSM)
- Optional TYAN SMDC M3291, IPMI v2.0 compliant remote server management kit

Power Supply

- EPS 12V, 2U, 600W with PFC for B2932T26W8H
- EPS 12V, 2U, 600W 1+1 redundant power with PFC for B2932T26W8HR

Regulatory

- FCC Class B (Declaration of Conformity)
- CE (Declaration of Conformity)

Environment Temperature

- Operating temperature 5^{o}C~35^{o}C
- Non-operating temperature -40^{o}C~ 70^{o}C

1.4 Unpacking

This section describes the TA26 B2932 package contents and accessories. Open the box carefully and ensure that all components are present and undamaged.

1.4.1 Box Contents

Component	Description
	Industry standard 2U chassis, (8) hot-swap HDD bays
	TYAN Thunder n3600M S2932 motherboard (pre-installed)
	Slim DVD-ROM drive (pre-installed)
	LED and USB control board (pre-installed)
A B	EPS 12V, 2U, 600W PSU with PFC (pre-installed) (A) (B2932T26W8H models) EPS 12V, 2U, 600W (1+1) redundant PSU with PFC (pre-installed) (B) (B2932T26W8HR models)
A B	System Fans: 1 x (60mm x 60mm) (A) 2 x (80mm x 80mm) (B)

1.4.2 Accessories

If any items are missing or appear damaged, contact your retailer or browse to TYAN's Web site for service: http://www.tyan.com.

The Web site also provides information on other TYAN products, plus FAQs, compatibility lists, BIOS settings, and more.

1 x TYAN Driver CD

2 x Heatsinks

Unit Handles

Power Cables
Left to right: Europe, US

FDD Cable

Barebone Manual &
Mainboard Manual

Screw Pack

FDD Rails

FDD Power Cable

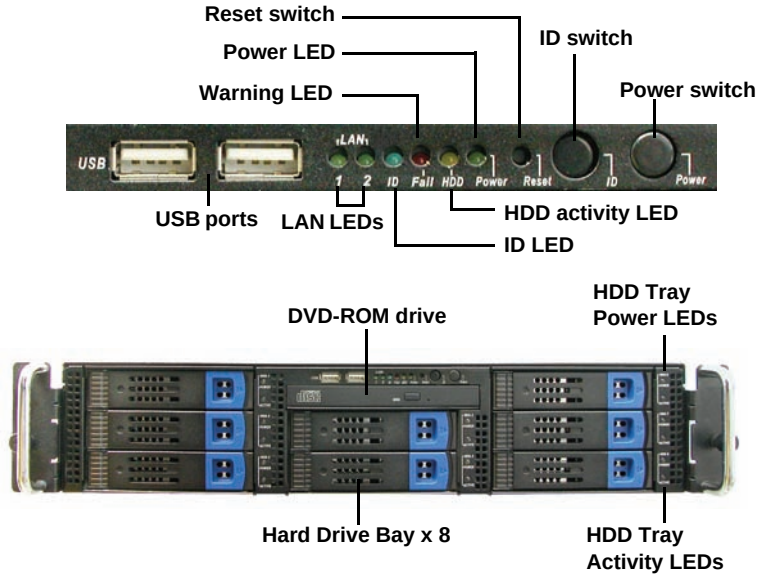
Sliding Rail

TYAN Logo

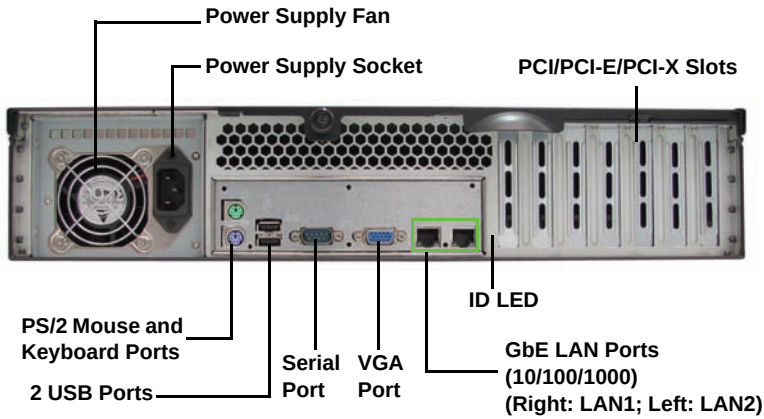
1.5 About the Product

The following views show you the product.

1.5.1 System Front View



1.5.2 System Rear View



1.5.3 LED Definitions

Front Panel

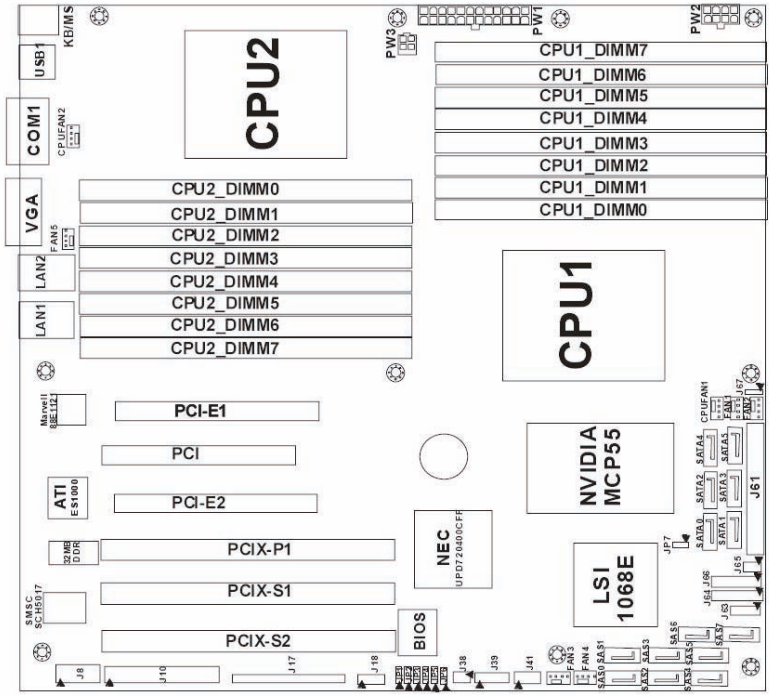
LED		Color	State	Description
Power		Green OFF	ON OFF	Power ON Power OFF
HDD Activity		Amber OFF	Blinking OFF	HDD/DVD-ROM access activity No disk activity
LAN1/LAN2/Linkage		Green Green OFF	ON Blinking OFF	LAN linked LAN accessing No LAN linked
Fail		Red OFF	ON OFF	System fails Abnormal power off Normal
Hot Swappable HDD Tray Power LED		Green OFF	ON OFF	Power connected Power disconnected
Hot Swappable HDD Tray Active LED	SAS HDD	Green Green OFF	ON Blinking OFF	HDD ready HDD access activity HDD not ready
	SATA HDD	Green OFF	Blinking OFF	HDD access activity No disk activity

Rear I/O LED

*Right or Left is viewed from the rear.

LED	Color	State	Description
LAN1/LAN2 Linkage/ Activity (Left Side)	Green Green OFF	ON Blinking OFF	10Mb/100Mb/1000Mb linked 10Mb/100Mb/1000Mb activity No LAN linked and activity
LAN1/LAN2 Linkage/ Activity (Right Side)	Yellow	1 Blinking 2 Blinking 3 Blinking OFF	10Mb mode 100Mb mode 1000Mb mode NO LAN linked and activity
Note: In 10 Mbps, the Right LED blinks yellow once in repeat and continuous action. In 100 Mbps, the Right LED blinks yellow twice in repeat and continuous action. So does the condition in 1000 Mbps.			
ID LED	Blue OFF	ON OFF	System is identified System is not identified
Zippy Power Supply LED	Green Green Amber Amber OFF	ON 1Hz Blinking ON 1Hz Blinking OFF	Output ON and OK AC present/Only 5Vsb ON Power supply critical event causing a shutdown: failure, OCP, OVP, fan fail Power supply warning event where the power supply continues to operate: high temp., high power, high current, slow fan No AC power

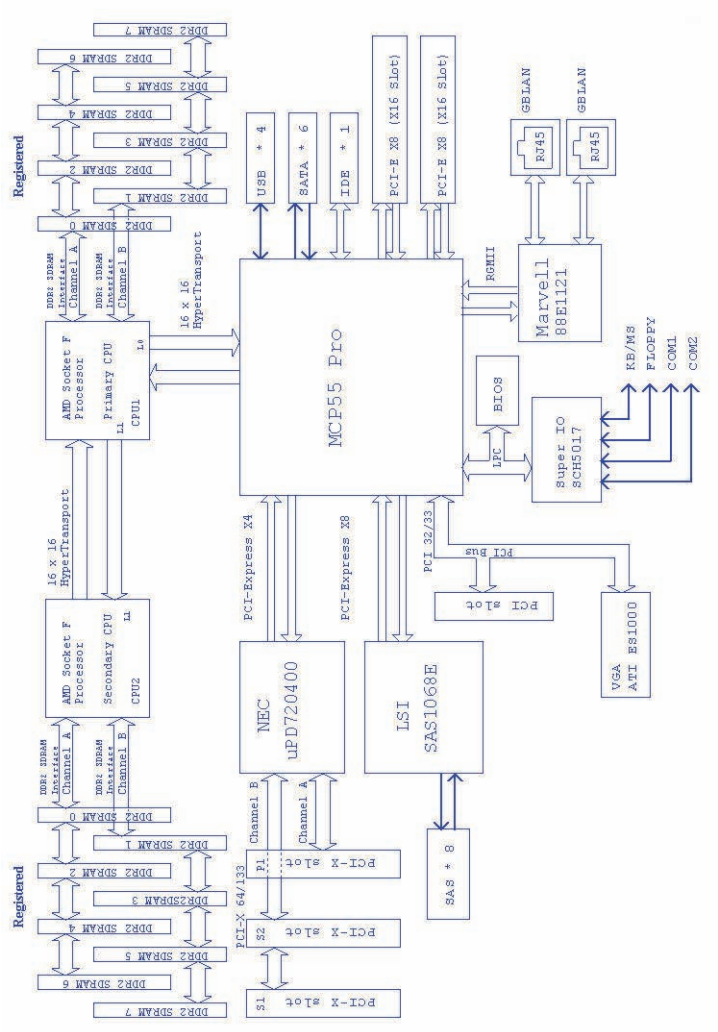
1.5.4 Motherboard Layout



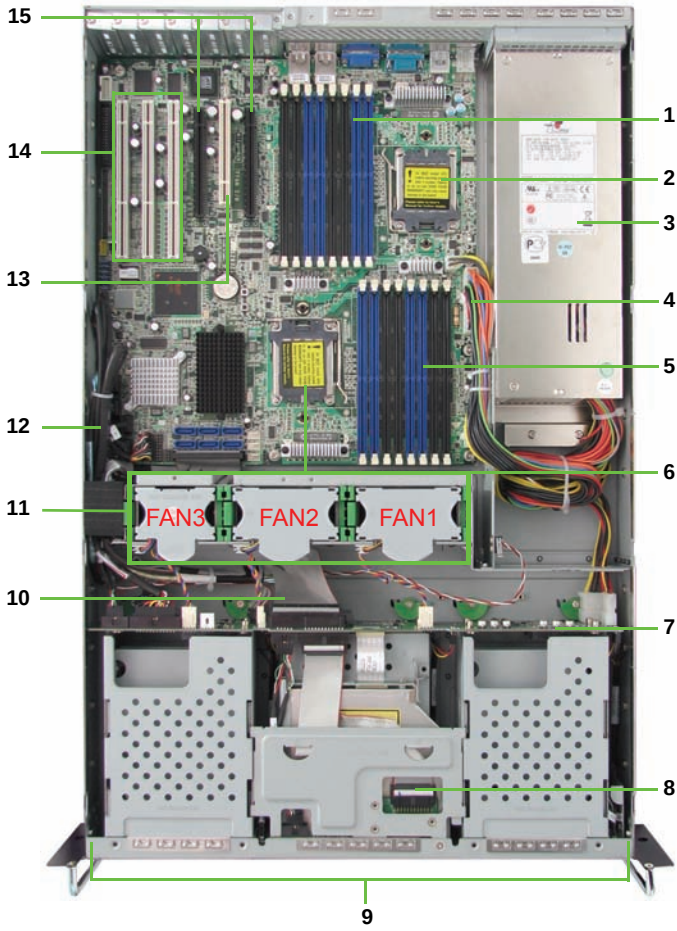
1.5.5 Jumpers & Connectors

Jumper/ Connector	Function
JP1/ JP2	PCI-X1/ PCI-X2 Speed Setting Jumper
JP3/ JP4	ASF2.0/ SMDC Select Jumper
JP5	VGA Enable/ Disable Jumper (Close 1-2) Default, enabled (Close 2-3) Disabled
JP6	SAS Enable/ Disable Jumper (Close 1-2) Default, enabled (Close 2-3) Disabled
JP7	Clear CMOS Jumper (Close 1-2) Default (Close 2-3) Clear CMOS
J1	Keyboard/ Mouse Connectors
J2	VGA Connector
J3	COM Port Connector
J4/ J5	Gigabit LAN Port
J7/ J42/ J43/ J59/ J62	Chassis Fan Connectors J59: FAN1, J62: FAN2, J42: FAN3, J43: FAN4, J7: FAN5
J8	COM Port Pin Header
J9/ J55	J55: CPUFAN1; J9: CPUFAN2 connectors
J10	Floppy Connector
J17	SMDC Connector
J18	IPMB Pin Header
PW1/ PW2/ PW3	Power Connectors
J38	LCM Pin Header (for barebone use only)
J39/ J63	TYAN Front Panel 2 Connector (for barebone use only)
J41	Front Panel USB2.0 Connectors
J61	Primary IDE Connector
J64	Front Panel Header
J65	SGPIO Header (for barebone use only)
J66	SAS Fault LED Pin Header (for barebone use only)

1.5.6 System Block Diagram



1.5.7 Internal View



1. CPU2 Memory Slots
2. CPU2
3. Power Supply
4. Power Connector
5. CPU1 Memory Slots
6. CPU1
7. SAS/SATA Backplane
8. LED Control Board Cable
9. Eight (8) SAS/SATA HDD trays
10. DVD-ROM Cable
11. System Fans (Right to Left: FAN1, FAN2, FAN3)
12. SAS/SATA Cables (8)
13. PCI Slot
14. PCI-X Slots
15. PCI-E Slots

Chapter 2: Setting Up

2.0.1 Before You Begin

This chapter explains how to install the CPU, CPU heatsink, memory modules, hard drives, and floppy drive. Instructions on inserting a PCI card are also given.

Take note of the precautions mentioned in this section when installing your system.

2.0.2 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.0.3 Tools

The following procedures require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.0.4 Precautions

Components and electronic circuit boards can be damaged by discharges of static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport TA26 B2932 or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

2.1 Installing Motherboard Components

This section describes how to install components on to the motherboard, including CPU, memory modules and PCI card.

2.1.1 Removing the Chassis Cover

Follow these instructions to remove the Transport TA26 B2932 chassis cover.

1. Turn the screw on the back side. Then slide the chassis cover in the direction of arrow.

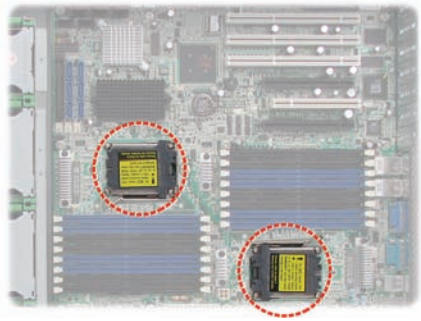
2. Lift off the cover.

2.1.2 Installing the CPU

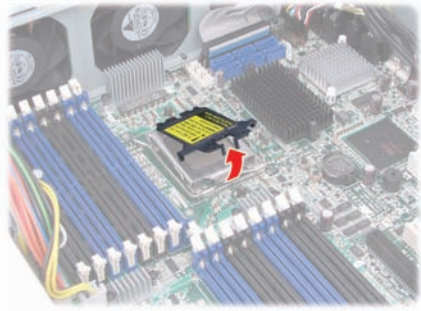
Follow these instructions to install the CPU.

1. Remove the one screw securing the pre-installed air duct.

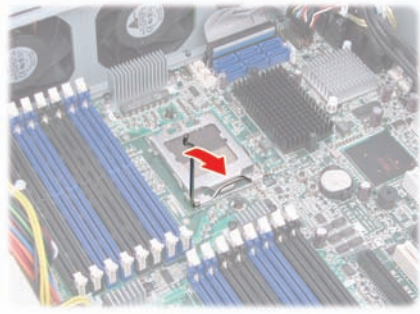
2. Remove the air duct and locate the two CPU socket on the motherboard.



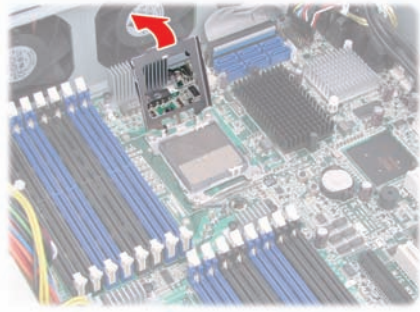
3. Remove the cover on the CPU socket.



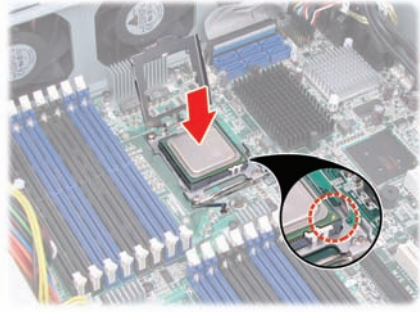
4. Lift up the CPU lever to unlock the socket.



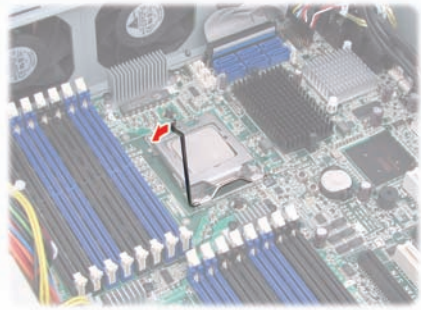
5. Open the socket in the direction as illustrated.



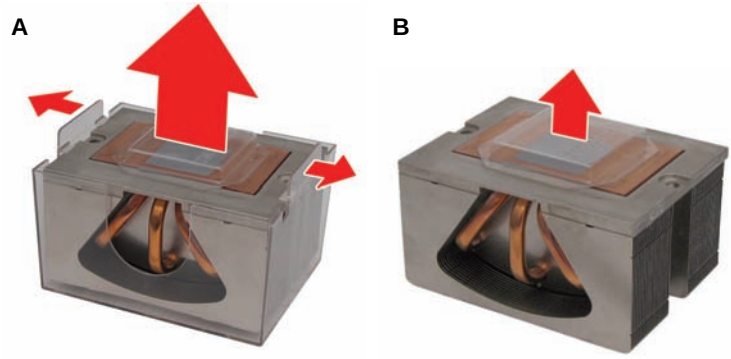
6. Place the CPU in the CPU socket, ensuring that pin 1 is located as shown below.



7. Close the cover and press the CPU socket lever down to secure the CPU.



8. Take out the new heatsink from the plastic case as shown (A). Then remove the protective cover to reveal the pre-applied thermal grease (B).



9. Align the heatsink screw holes with the holes on the motherboard and insert two heatsink screws as shown.

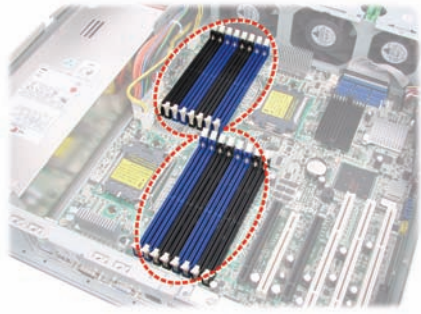
10. Repeat these steps when installing a second CPU.

2.1.3 Installing the Memory

Follow these instructions to install the memory modules on the motherboard.

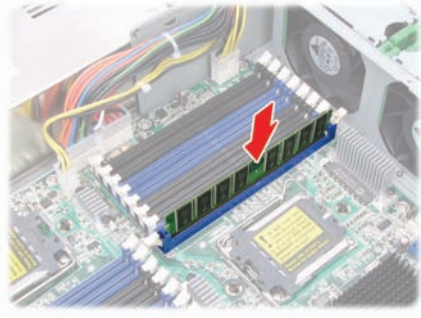
1. Remove the one screw securing the pre-installed air duct.

2. Remove the air duct and locate the memory slots on the motherboard.



3. Press the memory slot locking levers in the direction of the arrows as shown below.

4. Align the memory module with the slot. The module has indentations that align with notches in the slots.
5. Insert the memory module into the slot as shown below.



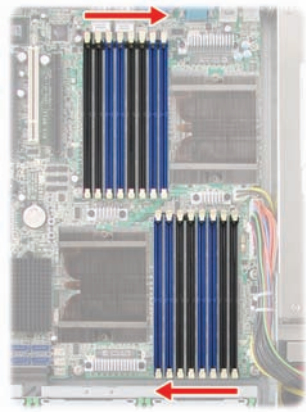
When inserted properly, the memory slot locking levers lock automatically onto the indentations at the ends of the module.

The following chart outlines the suggested rules for populating memory.

	Single CPU installed (CPU1 only)				Dual CPU installed (CPU1 and CPU2)			
Population Option	1	2	3	4	5	6	7	8
CPU1_DIMM0			X	X			X	X
CPU1_DIMM1			X	X			X	X
CPU1_DIMM2			X	X			X	X
CPU1_DIMM3			X	X			X	X
CPU1_DIMM4		X	X	X		X	X	X
CPU1_DIMM5		X	X	X		X	X	X
CPU1_DIMM6	X	X	X	X	X	X	X	X
CPU1_DIMM7	X	X	X	X	X	X	X	X
CPU2_DIMM0							X	X
CPU2_DIMM1							X	X
CPU2_DIMM2							X	X
CPU2_DIMM3							X	X
CPU2_DIMM4						X	X	X
CPU2_DIMM5						X	X	X
CPU2_DIMM6					X	X	X	X
CPU2_DIMM7					X	X	X	X

NOTE:

1. X indicates a populated DIMM slot.
2. Symmetrical DIMMs must be identical.
   - Same DRAM technology, e.g. 128-bit, 256-bit, etc.
   - Same DRAM bus width, e.g. x8 or x16
   - Matched Sided DIMMs (single-sided or double-sided)



2.1.4 Installing PCI-E Cards

The TA26 B2932 has six PCI card slots:

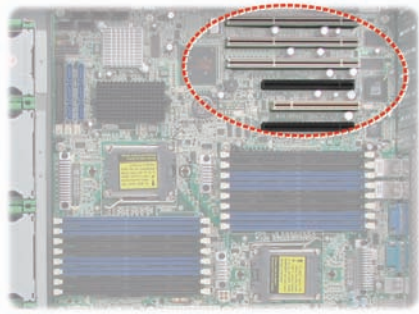
1 x PCI card slot

2 x PCI-E card slots

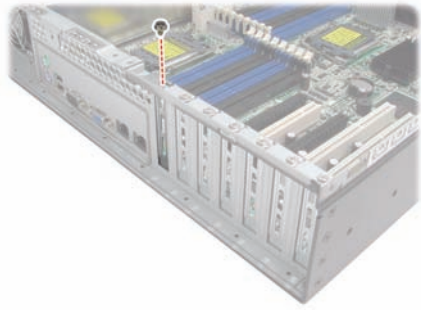
3 x PCI-X card slots

Follow these instructions to install any of the above kinds of add-in cards in your TA26 B2932 system.

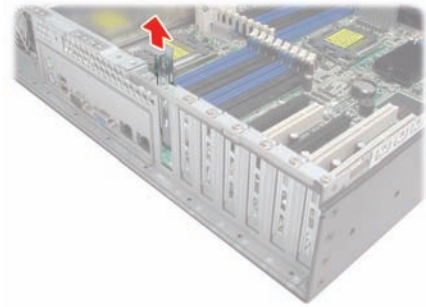
1. Locate the PCI/PCI-E/PCI-X card slots on the motherboard. See “System Internal View” on page 14 for the PCI/PCI-E/PCI-X slot locations.



2. Unscrew the bracket from the slot you want to use.



3. Lift up the bracket.



4. Insert a PCI/PCI-E/PCI-X card into the appropriate slot. Secure the card with the screw you removed from the bracket.

2.1.5 Installing Hard Drives

The TA26 B2932 supports up to eight serial SAS/SATA hard drives. Follow these instructions to install a hard drive.

1. Press the locking lever latch in the direction shown by the arrow below. The latch will pop open.

2. Slide the HDD tray out.

3. Unscrew the tray from the base as shown.

4. Remove the base.

5. Place a hard drive into the drive tray.

6. Screw the hard drive in place using 4 HDD screws.

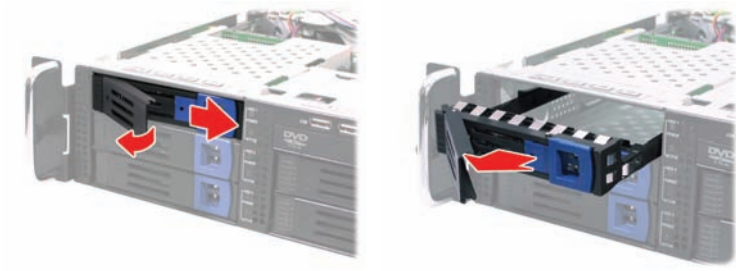
7. Reinsert the tray into the bay and press the locking lever to secure.

2.1.6 Installing a Floppy Drive

This section describes how to install a floppy disk drive in the TA26 B2932 if required.

Follow these instructions to install a floppy disk drive in the TA26 B2932.

1. Remove the top, left hand drive tray from the TA26 B2932 as shown.



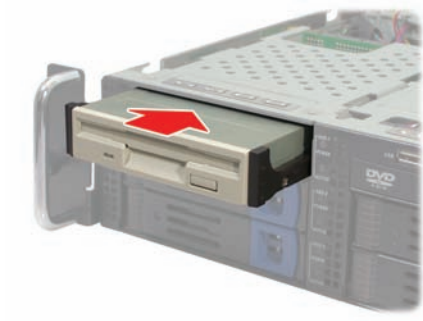
Note: The top, left hand drive bay is the only bay that can accommodate a floppy disk drive.

2. Attach the supplied FDD rails to the floppy disk drive with six (6) M3L5, BIN (+) screws. The wide end of the rails should be pointing towards the front.

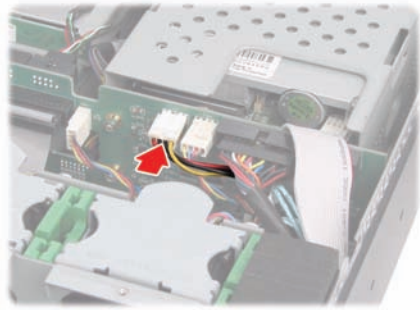
Note: The FDD rails each have a flat side which should be against the body of the floppy drive when installed. There is also a spring catch mechanism on the right hand rail (when looking at the floppy disk drive from the front).

3. Plug the FDD power and data cables into the ports on the back of the floppy disk drive.

4. Thread the cables out through the back of the empty drive bay. Slide the floppy disk drive into the drive bay until it clicks into place and fits flush with the front panel.

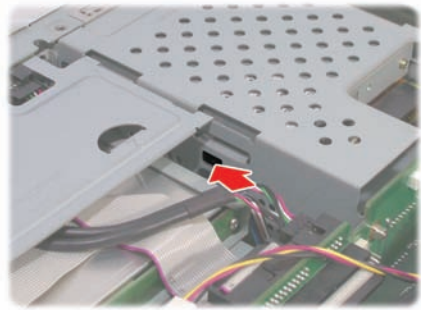


5. Connect the other end of the power cable to the connector (J37) on the backplane.



6. Connect the other end of the supplied FDD cable to the FDD slot (J10) on the motherboard.

Note: To release the floppy disk drive from the drive bay, you will need to press the release catch inside the chassis.



2.2 Rack Mounting

After installing the necessary components, the Transport TA26 B2932 can be mounted in a rack using the supplied rack mounting kit.

Rack mounting kit

Sliding Rails x 2

Mounting Ears x 2

Screws Kit x 1

Mounting Brackets x 4 (pre-installed)

2.2.1 Installing the Server in a Rack

Follow these instructions to mount the TA26 B2932 into an industry standard 19" rack.

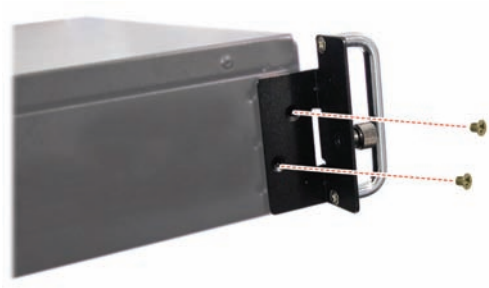
NOTE: Before mounting the Transport TA26 B2932 in a rack, ensure that all internal components have been installed and that the unit has been fully tested. Maintenance can be performed on the unit while in a rack but it is preferable to install the device in a fully operational condition.

Screws List

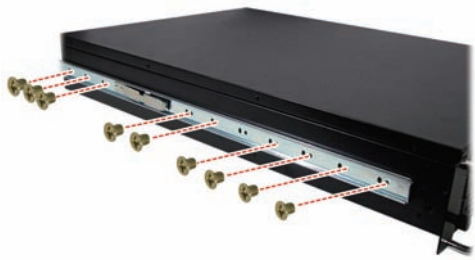
No.	Screw	Size	Quantity
A		M4L6, S10C (marked blue)	4
B		M6	8
C		M4-L5	18

Attaching the Inner Rails to the Unit

7. Screw the handles to each side of TA26 B2932 as shown using two (2) M4L6, S10C screws (A) from the supplied screws kit.

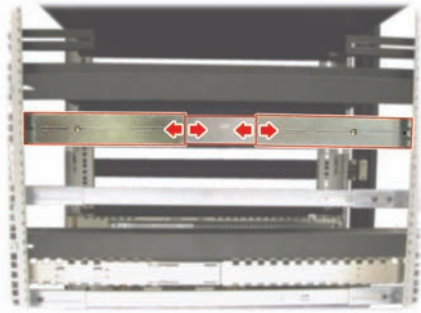


8. Attach the inner rails both sides of the unit using nine (9) M4-L5 screws (C) on each side.



Installing Outer Rails to the Rack

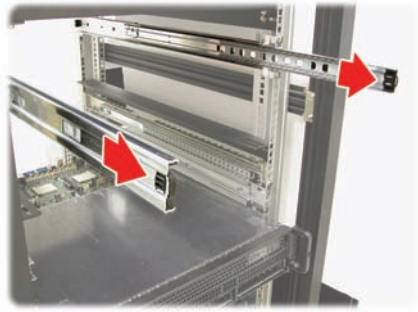
1. Adjust the outer rail to match the length of the unit.



2. Secure the outer rail to the rack using 2 brackets and M6 screws (B) for each side. Secure the mounting brackets from outside, not inside, of the rack.

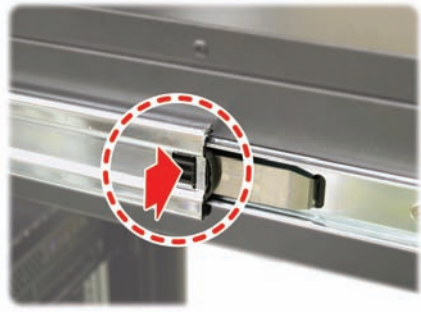
Rackmounting the Server

1. Draw out the middle rail to the latch position.



2. Lift the unit and then insert the inner slide rails into the middle rails.

3. Push the unit in and press the latch key.



4. Push the whole system into the rack.

5. Secure the mounting handles of the unit to the rack.

Note: To avoid injury, it is strongly recommended that two people lift the TA26 B2932 into the place while a third person screws it to the rack.

Chapter 3: Replacing Pre-Installed Components

3.1 Introduction

This chapter explains how to replace pre installed components including the motherboard, LED control board, USB adapter board, HDD, and DVD-ROM drive, etc.

Take note of the precautions in this section when installing your system.

3.1.1 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers keeps them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

3.1.2 Tools

The procedures that follow require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

3.1.3 Precautions

Components and electronic circuit boards can be damaged by static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport TA26 B2932 or injury to yourself.

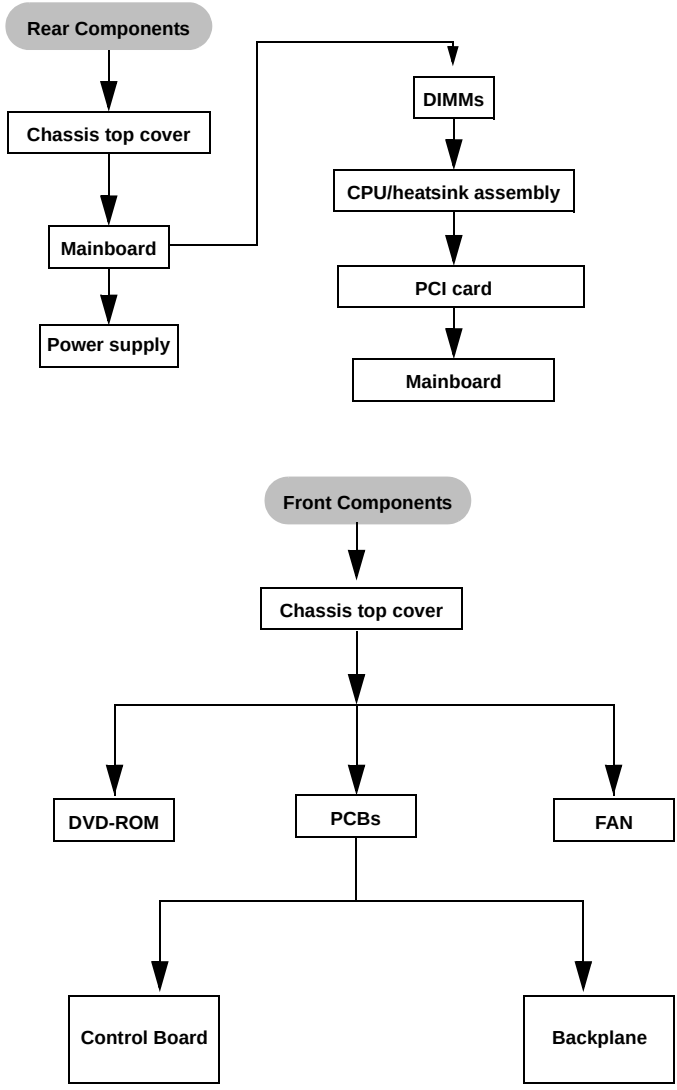
- Ground yourself properly before removing the top cover of the system. Unplug the power from your computer power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

3.2 Disassembly Flowchart

The following flowchart outlines the disassembly procedure.



Note: The Transport TA26 B2932 should be always powered off before disassembly.

3.3 Removing the Cover

Before replacing any parts you must remove the chassis cover.

Follow these instructions to remove the cover of the Transport TA26 B2932 chassis cover.

1. Remove the screw on the back side. Then slide the chassis cover in the direction of arrow.

2. Lift off the cover.

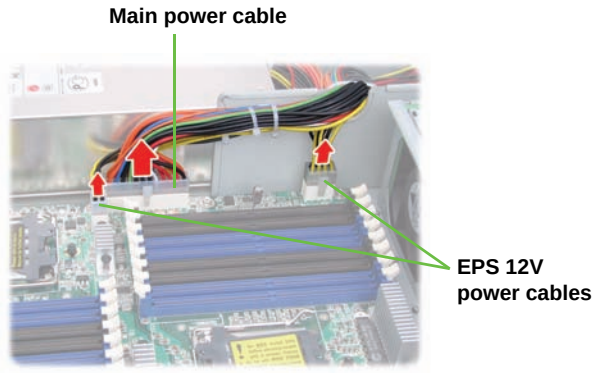
3.4 Replacing Motherboard Components

Follow these instructions to replace motherboard components, including the motherboard.

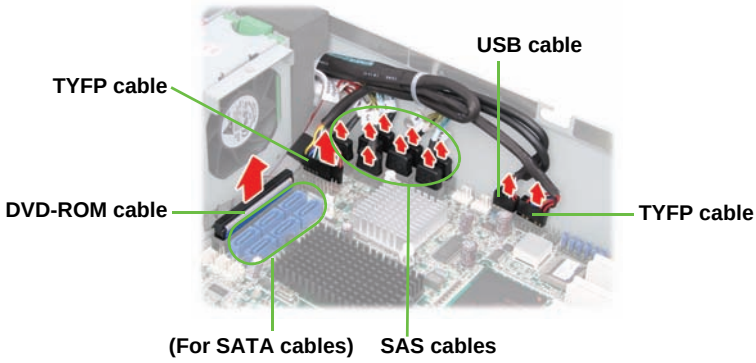
3.4.1 Disconnecting All Motherboard Cables

Before replacing the motherboard or certain components, remove cables connected to the motherboard. Follow these instructions to remove all motherboard cabling.

1. Disconnect power cables.



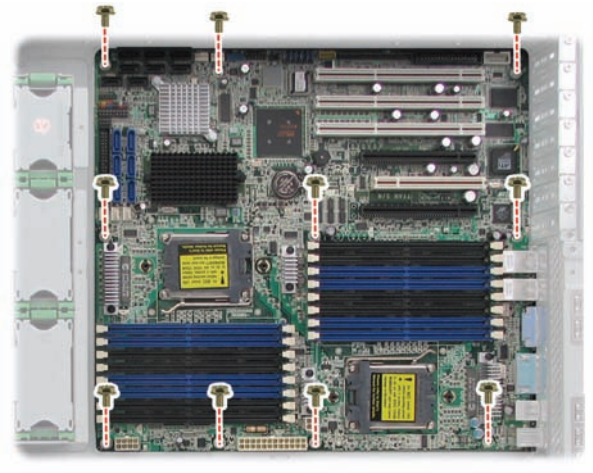
2. Disconnect the DVD-ROM drive cable, TYFP cables, SAS/SATA hard drive cables, and USB cable.



3.4.2 Removing the Motherboard

After removing all of the aforementioned cables, follow these instructions to remove the motherboard from the chassis.

1. Remove the eight screws securing the motherboard to the chassis.



2. Remove the motherboard.

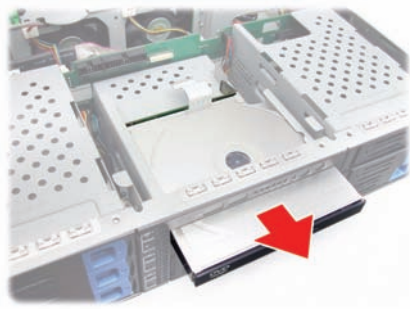
3.5 Replacing the Slim DVD-ROM

Follow these instructions to replace the DVD-ROM.

1. Remove the FFC cable from the rear of the DVD-ROM drive.

2. Press the tab in the direction shown to release the DVD-ROM drive.

3. Push the DVD-ROM drive through the front of the TA26 B2932.



4. Remove the two screws that secure DVD-ROM drive to the backplane.

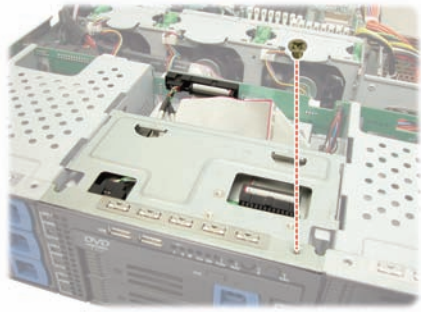
5. Replace the DVD-ROM drive.

6. Secure the DVD-ROM to the backplane using two screws. Then replace the unit into the drive bay and connect the DVD-ROM FFC cable.

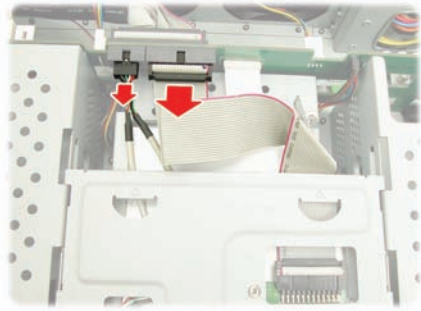
3.6 Replacing the LED Control Board

Follow these instructions to replace the LED control board.

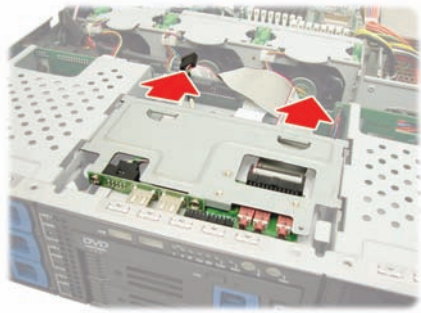
1. Remove the screw securing the LED control board unit to the chassis.



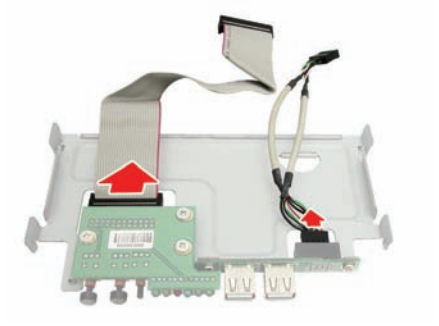
2. Remove the connector cables from the backplane.



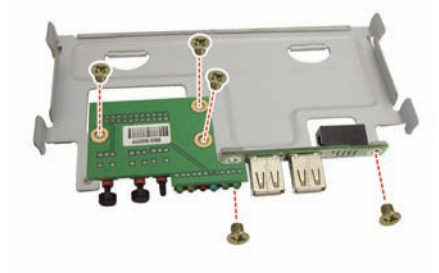
3. Slide back the LED control board bracket and lift free of the chassis.



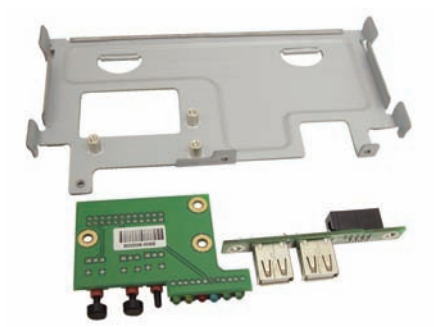
4. Remove the LED control board and USB cables from the LED control board and USB adapter board.



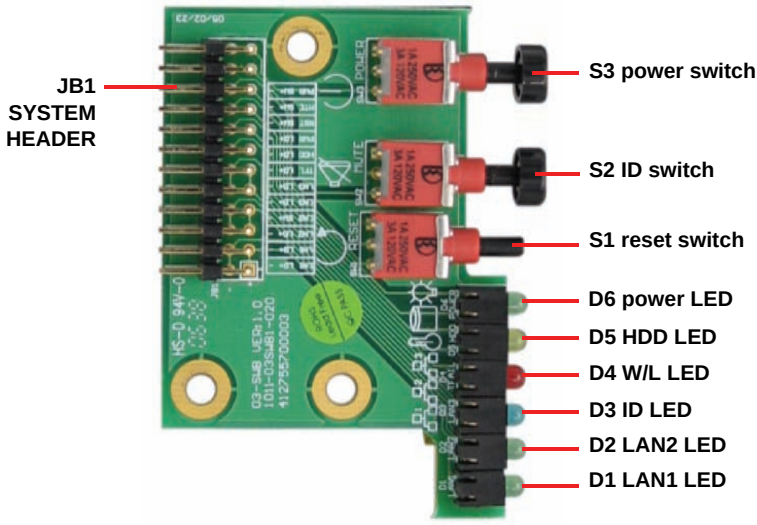
5. Remove the five screws securing the LED control board and USB adapter board to the bracket.



6. Release the LED control board and USB adapter board from bracket. After replacement, insert and secure the unit to the chassis following the above procedure in reverse.



3.6.1 LED Control Board Features



3.6.2 LED Control Board Connector Pin Definitions

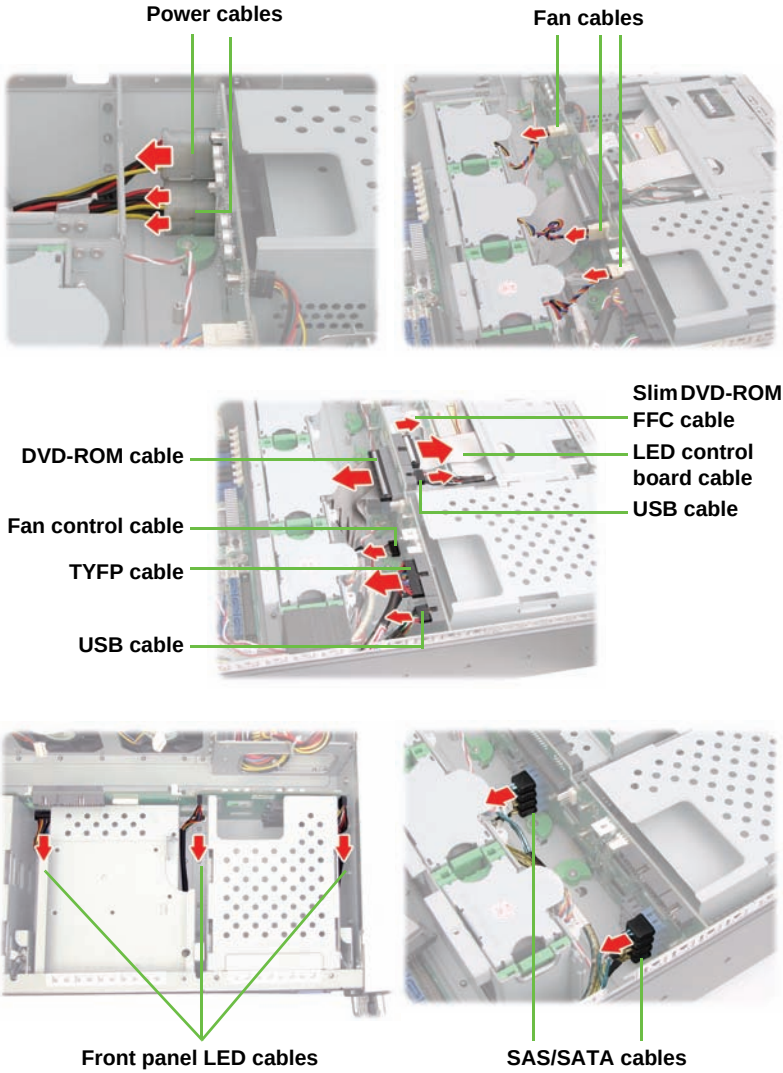
JB1 2x12 Pin Output Connector

1	LAN1 GR-LED +	2	LAN1-LED -
3	Reserved	4	Reserved
5	LAN2 GR-LED +	6	LAN2-LED -
7	Reserved	8	Reserved
9	Reserved	10	Reserved
11	ID-LED +	12	ID-LED -
13	W-LED +	14	W-LED -
15	Local HDD led +	16	Local HDD led -
17	System power led +	18	System power led -
19	System reset switch +	20	System reset switch -
21	ID-switch +	22	ID-switch -
23	System power switch +	24	System power switch -

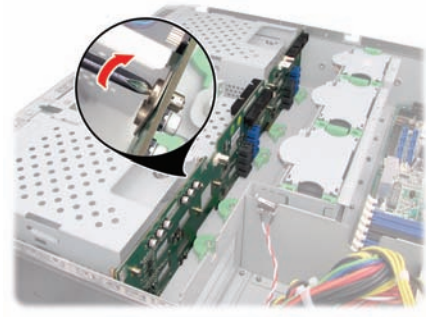
3.7 Replacing the Backplane

Follow these instructions to replace the backplane in your TA26 B2932 system.

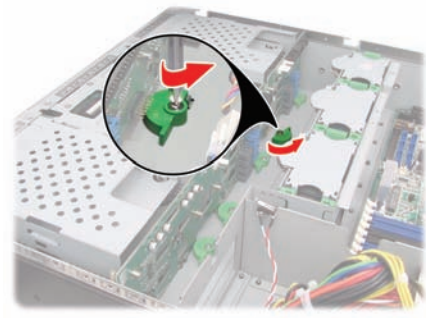
1. Remove all of cables connected to the backplane, including fan cables, DVD-ROM cables, LED control board cables, fan control cable, TYFP cable, USB cables, front panel LED cables, power cables, and SAS/SATA cables.



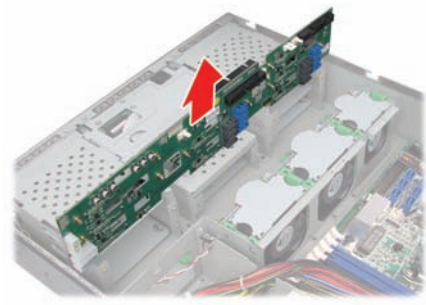
2. Remove the ten screws to release the backplane.



3. Turn the locking keys at the base of the backplane as shown.



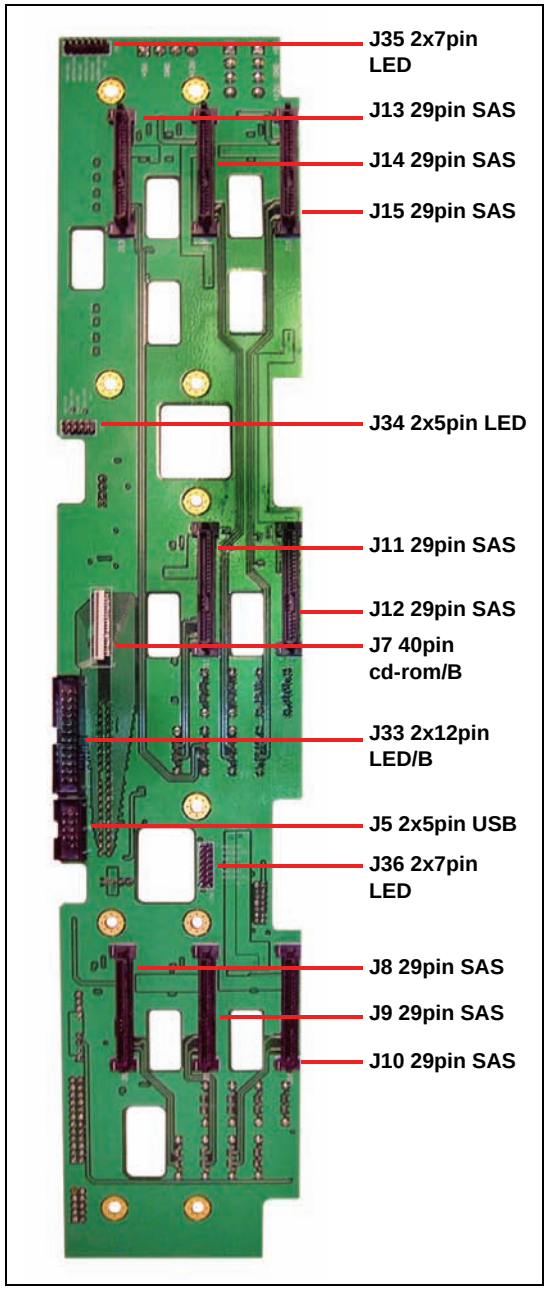
4. Pull out the backplane.



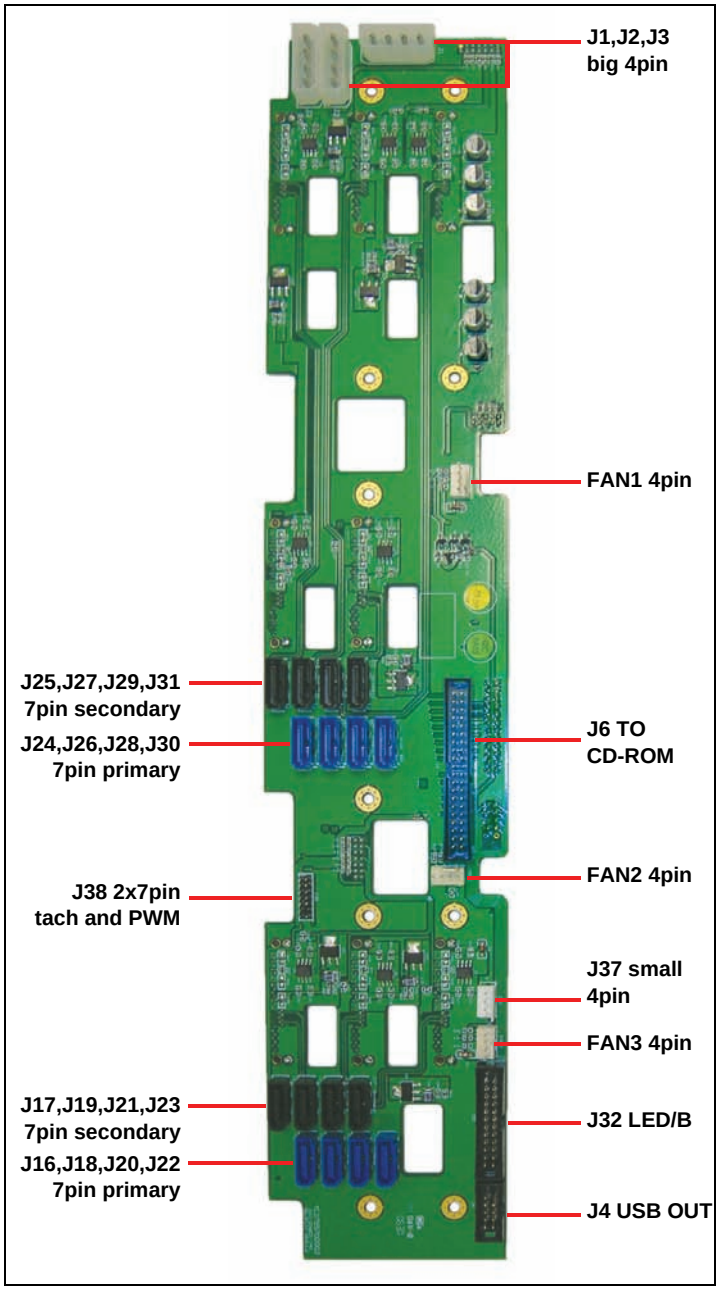
5. Place a new backplane in position and secure in place with the ten screws and locking keys released in step 2 and 3.
6. Reconnect all the cables to the backplane.

3.7.1 M1220 SAS/SATA Backplane Features

Front View



Rear View


J1,J2,J3
big 4pin
FAN1 4pin
J25,J27,J29,J31
7pin secondary
J24,J26,J28,J30
7pin primary
J6 TO
CD-ROM
FAN2 4pin
J38 2x7pin
tach and PWM
J37 small
4pin
FAN3 4pin
J17,J19,J21,J23
7pin secondary
J16,J18,J20,J22
7pin primary
J32 LED/B
J4 USB OUT

3.7.2 M1220 SAS/SATA Backplane Connector Pin Definitions

J32, J33 2x12pin LED board connector

1	LAN1 LED + (link/active)	2	LAN1 LED - (link/active)
3	Reserved	4	Reserved
5	LAN2 LED + (link/active)	6	LAN2 LED - (link/active)
7	Reserved	8	Reserved
9	Reserved	10	Reserved
11	ID-LED +	12	ID-LED -
13	W-LED +	14	W-LED -
15	M/B HDD LED +	16	M/B HDD LED -
17	M/B power LED +	18	M/B power LED -
19	M/B reset switch +	20	M/B reset switch -
21	ID-switch +	22	ID-switch -
23	M/B power switch +	24	M/B power switch -

J7 SILM IDE 40pin Front Panel Connector

1	RESET	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	VCC
21	DMARQ	22	VCC
23	DIOW	24	VCC

25	DIOR	26	VCC
27	IORDY	28	CSEL
29	DMACK	30	VCC
31	INTRQ	32	IOCS16
33	DA1	34	PDIAG
35	DA0	36	DA2
37	CS1FX	38	CS3FX
39	DASP	40	VCC

Fan Signal Related Connector Pin Definitions

Note: The FAN signal naming is based on HW circuit design only. It might be different from the system fan name.

FAN1, FAN2, FAN3: 4-pin Fan connector

1	GND
2	VDD +12V
3	TACH
4	PWM

J1, J2 and J3 power big 4-pin connector

1	VDD +12V
2	GND
3	GND
4	VCC +5V

J4, J5 USB 2x5pin connector

1	USB1 power +	2	USB2 power +
3	USB1 DATA -	4	USB2 DATA -
5	USB1 DATA +	6	USB2 DATA +
7	USB1 GND	8	USB2 GND
9	Key pin	10	None

J37 power small 4-pin connector

1	+5V
2	GND
3	GND
4	+12V

J36 HDD LED pin out

1	PLED1	2	GND
3	ALED1	4	ALED1 +
5	PLED2 +	6	GND
7	ALED2 -	8	ALED2 +
9	PLED3 +	10	GND
11	ALED3 -	12	ALED3+
13	None	14	Key

J34 HDD LED pin out

1	PLED4 +	2	GND
3	ALED4 -	4	ALED4 +
5	PLED5 +	6	GND
7	ALED5 -	8	ALED5 +
9	None	10	Key

J35 HDD LED pin out

1	PLED6 +	2	GND
3	ALED6 -	4	ALED6 +
5	PLED7 +	6	GND
7	ALED7 -	8	ALED7 +
9	PLED8 +	10	GND
11	ALED8 -	12	ALED8 +
13	None	14	Key

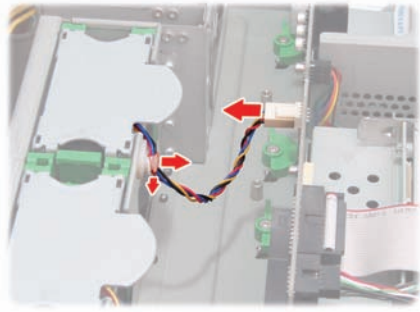
J38 2x7pin FAN tach and PWM pin out

1	FAN1 tach	2	Reserved
3	FAN2 tach	4	Reserved
5	FAN3 tach	6	Reserved
7	Reserved	8	Reserved
9	Reserved	10	Reserved
11	GND	12	KEY
13	GND	14	PWM input

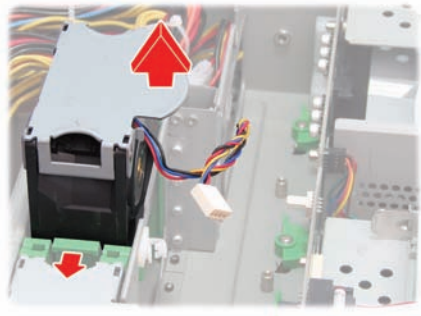
3.8 Replacing the System Fan

Follow these instructions to replace the cooling fans in your TA26 B2932 system.

1. Locate the fan connector on the backplane and unplug the fan cable as shown below.



2. Take the fan away from the chassis.



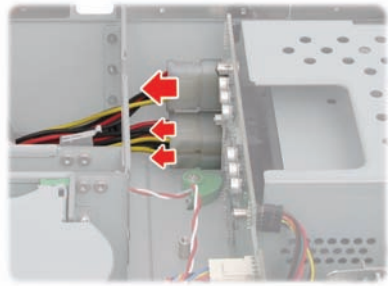
3. Replace a new fan into the chassis following the above steps in reverse.

3.9 Replacing the Power Supply

Follow these instructions to replace the power supply in your TA26 B2932 system.

3.9.1 Standard Power Supply

1. Remove the chassis cover. See “Removing the Cover” on page 38 for more details.
2. Detach the power cables from the motherboard and backplane. See “Disconnecting All Motherboard Cables” on page 39 for more details.



3. Remove the three screws securing the power supply to the chassis.

4. Remove the two screws attaching the power supply to the chassis interior and lift out the unit.

5. Lift the power supply free from the chassis.

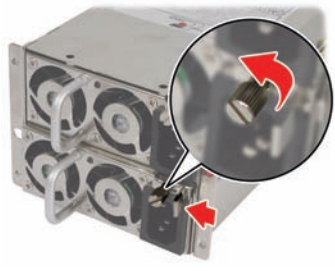
6. Replace a new power supply into the chassis following the above steps in reverse.

3.9.2 Optional 1+1 Redundant Power Supply

If the optional 1+1 redundant power supply is fitted, either of the two units can be hot swapped. Follow these instructions to replace a single power unit with a redundant power supply unit.

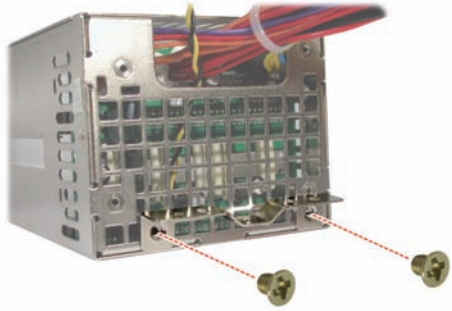
Note: Before proceeding, remove the new redundant power supply from its packaging.

1. Release thumb screws of the redundant power supply and push the latch bar to the left. Pull both two power modules out.



2. Remove the screws which fix the bracket to the sides of the redundant power supply casing.

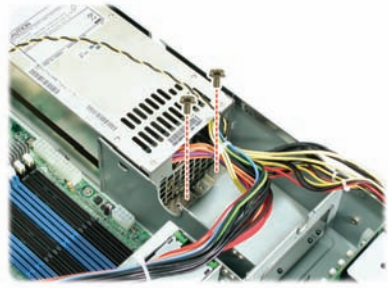
3. Screw the bracket to the rear of the power supply casing.



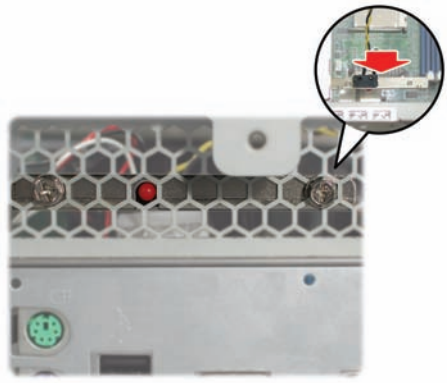
4. Insert the redundant power supply casing into the chassis, making sure it is aligned as shown.

5. Screw the casing to the chassis exterior.

6. Screw the casing to the chassis interior.

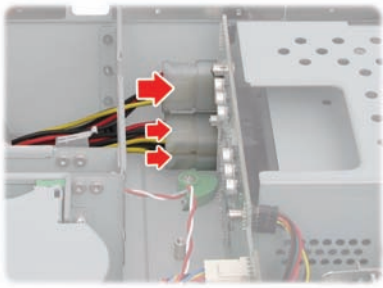


7. Fix the redundant power supply switch to the chassis rear window with two Hex #6-32 screws.



8. Insert the new power supply unit and secure by turning the locking screw.

9. Re-attach all power supply connector cables to the motherboard and backplane.



Appendix I: BIOS Differences

The BIOS of B2932 is similar to the BIOS of S2932. There is only one menu different. See the following for the differences in BIOS between B2932 and S2932. For a complete review of S2932 BIOS, refer to the motherboard manual.

B2932 Advanced/Hardware Health Configuration

BIOS Setup Utility **Advanced**	
Hardware Health Configuration	Enables Hardware Health Monitoring Device.
H/W Health Function [Enabled] CPUFAN1, 2 FAN1,2 PWM Control [Disabled] FAN Fail LED Indicator [Enabled] **Hardware Health Event Monitoring**	
▶ Mainboard Voltages Report CPU1 Temperature :xx ºC/ xxx ºF CPU2 Temperature :xx ºC/ xxx ºF Ambient Temp (Near NEC) :xx ºC/ xxx ºF Ambient Temp (Near MCP55) :xx ºC/ xxx ºF System FAN1 Speed (TACH6) :xxxx RPM System FAN2 Speed (TACH7) :xxxx RPM System FAN3 Speed (TACH9) :xxxx RPM	←→ Select Screen ↑↓ Select Item +/ - Change Option F1 General Help F10 Save and Exit ESC Exit

S2932 Advanced/Hardware Health Information

BIOS Setup Utility

Advanced

Hardware Health Configuration		Enables Hardware Health Monitoring Device.
H/W Health Function	[Enabled]	
CPUFAN1, 2 FAN1,2 PWM Control	[Disabled]	
FAN3, FAN4, FAN5 PWM Control	[Disabled]	
FAN Fail LED Indicator	[Disabled]	
Hardware Health Event Monitoring		←→ Select Screen ↑↓ Select Item +/ - Change Option Tab Select Field F1 General Help F10 Save and Exit ESC Exit
▶ Mainboard Voltages Report		
CPU1 Temperature	:xx ºC/ xxx ºF	
CPU2 Temperature	:xx ºC/ xxx ºF	
Ambient Temp (Near NEC)	:xx ºC/ xxx ºF	
Ambient Temp (Near MCP55)	:xx ºC/ xxx ºF	
CPU1 FAN1 Speed (TACH1)	:xxxx RPM	
CPU1 FAN2 Speed (TACH2)	:xxxx RPM	
FAN1 Speed (TACH3)	:xxxx RPM	
FAN2 Speed (TACH4)	:xxxx RPM	
FAN3 Speed (TACH5)	:xxxx RPM	
FAN4 Speed (TACH6)	:xxxx RPM	
FAN5 Speed (TACH7)	:xxxx RPM	

Table of Differences

	S2932	**B2932**
FAN Fail LED Indicator	Disabled	Enabled
Hardware Monitor Fan	CPU1 Fan1 Speed CPU1 Fan2 Speed FAN1 Speed FAN2 Speed FAN3 Speed FAN4 Speed FAN5 Speed	System FAN1 Speed (TACH6) System FAN2 Speed (TACH7) System FAN3 Speed (TACH9)

Appendix II: Cable Connection Tables

SAS/SATA Cable

Table 1: TA26 B2932 Model

M1220 SAS/SATA Backplane	Connects to	Motherboard
J16	→	SAS0
J18	→	SAS1
J20	→	SAS2
J22	→	SAS3
J24	→	SAS4
J26	→	SAS5
J28	→	SAS6
J30	→	SAS7

FAN Cable

Table 2: System Fan to Backplane

System Fan	Connects to	M1220 SAS/SATA Backplane
Fan 1	→	FAN1 4-pin connector
Fan 2	→	FAN2 4-pin connector
Fan 3	→	FAN3 4-pin connector

Power Supply Cable

Table 3: Power Supply to Motherboard

Power Supply	Connects to	Motherboard
P1 24-pin power cable	→	PW1 24-pin connector
P2 8-pin power cable	→	PW2 8-pin connector
P3 4-pin power cable	→	PW3 4-pin connector

Table 4: Power Supply to Backplane

Power Supply	Connects to	M1220 SAS/SATA Backplane
P3 4-pin power cable	→	J1 4-pin connector
P3 4-pin power cable	→	J2 4-pin connector
P3 4-pin power cable	→	J3 4-pin connector

Other Cables

Table 5: Backplane to Motherboard

M1220 SAS/SATA Backplane	Connects to	Motherboard
J32 LED/B	→	J64
		J39
J4 USB OUT	→	J41
J6 TO CD-ROM	→	J61
J38 2x7pin Tach and PWM	→	J63

Table 6: Backplane to LED Control Board

M1220 SAS/SATA Backplane (Rear side)	Connects to	LED Control Board
J33 2x12pin LED/B	→	JB1 SYSTEM HEADER
J5 2x5pin USB		

Table 7: System Internal LED Cables to Backplane

M1220 SAS/SATA Backplane (Front side)	Connects to	TA26 B2932 System
J34 2x5pin LED	→	System Internal LED Cables
J35 2x7pin LED		
J36 2x7pin LED		

Table 8: DVD-ROM Related Cable

M1220 SAS/SATA Backplane	Connects to	DVD-ROM Backplane
J7 slim DVD connector	→	DVD-ROM Backplane

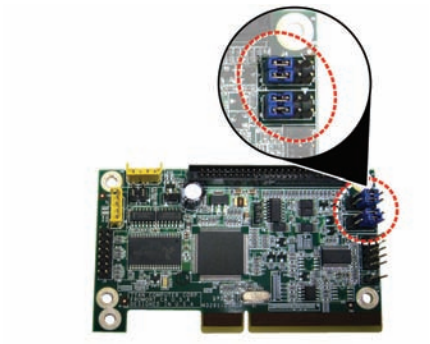
Table 9: FDD Related Cables

Motherboard FDD connector	→	FDD Drive
M1220 SAS/SATA Backplane J37 4-pin connector	→	FDD Drive

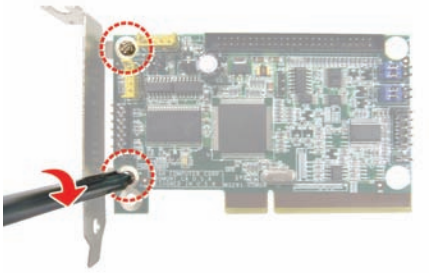
Appendix III: Installing the SMDC Card

The following provides you with the information on installing M3291 SMDC card into a PCI or PCI-X slot in your TA26 B2932 system.

1. Locate the TX/RX and RTS/CTS switch jumpers (J3 and J4) on the SMDC card, and place the jumper caps to close pins 5-8.



2. Secure M3291 on a low profile PCI bracket as shown.

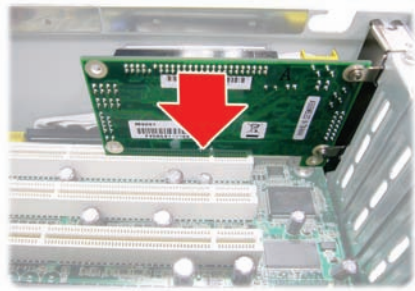


3. Connect the 2x25 pin SMDC cable to M3291 as shown.

4. Unscrew the bracket from the slot as shown. Lift up the bracket.

5. Connect the other end of SMDC cable to the SMDC connector (J18) on the motherboard.

6. Place the SMDC card in the PCI or PCI-X slot as shown.

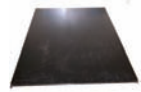
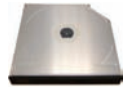


7. Secure the PCI bracket with the screw you removed from the card slot cover.

Cable Connection Table

SMDC Card (M3291)	Connects to	Motherboard
J1 connector	→	J17 SMDC connector

Appendix IV: FRU Parts Table

Item	Model Number	Picture	Quantity	Description
Motherboard	S2932WG2 NR		1	TYAN S2932WG2NR Motherboard
Chassis Unit	CCHA-0090		1	Chassis unit, Maryang2000
Chassis & Metal Parts	CCCV-0020		1	Top cover, Mitac Maryang2000
	CHDT-0030		8	HDD Carrier, External
FAN	CFAN-0250		2	80x80x38mm, FFC0812DE-7N20
	CFAN-0200		1	60x60x38mm, FFB0612EHE-6A46
Sliding Rails & Mounting kit	CRAL-0040		1	Rail Kit, 4708-3-28 EZP
Mounting Ear	CEAR-0100		1	Mounting Ear Left
	CEAR-0110		1	Mounting Ear Right
Peripheral Drives & backplane	CDVD-0020		1	Slim DVD-ROM; DVD DRIVE; DV-28E-N93
	CPCA-0250		1	Slim DVD-ROM Adapter Board

Item	Model Number	Picture	Quantity	Description
Storage Backplane	M1220		1	PCB ASSY; 2U, 8BAY, SAS BACKPLANE M1220
Heat Sink & Cooler	CHSK-0280		2	CPU Cooler
Air Duct	CADT-0160		1	AIR_DUCT; PC+ABS, for TA26
Power Supply	CPSU-0180		1	R2W-5600P3V, 600W 1+1 redundant, for B2932T26W8HR
	CPSU-0170		1	P2M-6600P, 600W Single Power Supply, for B2932T26W8H
Front Panel Board	CPCA-0270		1	Front Panel LED/SWITCH/ID LED Board
	CPCA-0080		1	USB Adapter Board, 2-port, for TA26
Cable Set	CCBL-0310		1	A/C Power Cord, L=1830mm, US type
	CCBL-0300		1	A/C Power Cord, L=1830mm, Germany type
	CCBL-0671		1	SAS Cable, 4x7P to 4x7P, L=400mm
	CCBL-0675		1	SAS Cable, 4x7P to 4x7P, L=300mm
	CCBL-0130		1	Slim CD-ROM FFC, 40-Pin, for TA26

Item	Model Number	Picture	Quantity	Description
Cable Set	CCBL-0090		2	HDD LED Cable Assembly, 10-pin, 200mm, for TA26
	CCBL-0100		1	HDD LED Cable Assembly, 14-pin, 200mm, for TA26
	CCBL-0111		1	Control Board Cable, TYFP1/TYFP2, TYFP1 375mm/TYFP2 315mm
	CCBL-0144		1	Chassis Intrusion Cable L=800mm
	CCBL-0750		1	USB cable, MB to backplane, 300mm, for TA26
	CCBL-0200		1	USB cable, backplane to LED board, 130mm, for TA26
	CCBL-0120		1	LED Board Cable
	CCBL-0433		1	DVD ROM Cable
	CCBL-0842		1	FAN Control Cable L=350mm
	CCBL-0810		1	Floppy Cable, L=610mm
	CCBL-0820		1	Floppy Power Cable, L=90mm

Technical Support

If a problem arises with your system, you should first turn to your dealer for direct support. Your system has most likely been configured or designed by them and they should have the best idea of what hardware and software your system contains. Hence, they should be of the most assistance for you. Furthermore, if you purchased your system from a dealer near you, take the system to them directly to have it serviced instead of attempting to do so yourself (which can have expensive consequences).

If these options are not available for you then TYAN Computer Corporation can help.Besides designing innovative and quality products for over a decade, TYAN has continuously offered customers service beyond their expectations. TYAN's website (**www.tyan.com**) provides easy-to-access resources such as in-depth Linux Online Support sections with downloadable Linux drivers and comprehensive compatibility reports for chassis, memory and much more. With all these convenient resources just a few keystrokes away, users can easily find the latest software and operating system components to keep their systems running as powerful and productive as possible. TYAN also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, TYAN serves multiple market segments with the industry's most competitive services to support them.

"TYAN's tech support is some of the most impressive we've seen, with great response time and exceptional organization in general" - Anandtech.com

Please feel free to contact us directly for this service at **tech-support@tyan.com**

Help Resources:

1. See the beep codes section of this manual.

2. See the TYAN website for FAQ's, bulletins, driver updates, and other information: http://www.tyan.com

3. Contact your dealer for help BEFORE calling TYAN.

4. Check the TYAN user group: alt.comp.periphs.mainboard.TYAN

Returning Merchandise for Service

During the warranty period, contact your distributor or system vendor FIRST for any product problems. This warranty only covers normal customer use and does not cover damages incurred during shipping or failure due to the alteration, misuse, abuse, or improper maintenance of products.

NOTE: A receipt or copy of your invoice marked with the date of purchase is required before any warranty service can be rendered. You may obtain service by calling the manufacturer for a Return Merchandise Authorization (RMA) number. The RMA number should be prominently displayed on the outside of the shipping carton and the package should be mailed prepaid. TYAN will pay to have the board shipped back to you.

TYAN Transport TA26 B2932 User's Manual v1.0

Document part No. D1867-100